



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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May 27, 2008

Mr. John Mundell  
Mundell & Associates  
110 South Downey Avenue  
Indianapolis, IN 46202

Re: Remediation Work Plan Review  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana  
VRP #6061202

Dear Mr. Mundell:

This office has completed review of the Remediation Work Plan (RWP) received February 28, 2008 for the Michigan Plaza facility in Indianapolis, Indiana. The IDEM has the following comments.

Comments:

1. The CAP 18 remediation strategy proposed and implemented by the consultant is not objectionable to IDEM. However, additional clarification and monitoring data will be required before IDEM can grant formal approval. The RWP does not clearly state the alternative remedial strategy if the CAP 18 remedy does not satisfactorily degrade contaminants to the intended closure goals. Additional CAP 18 injections may be necessary or a completely alternative remedy will need to be developed should contaminants persist above closure goals.
2. The extent of groundwater contamination has not been defined. The IDEM agrees with the placement of the monitoring well west of MW-171S and MW-171D once access is granted on the Floral Park Cemetery property. Also, please update the figures in the RWP with the newly constructed Floral Park Cemetery building, which is directly south of Michigan Plaza.
3. The consultant has proposed to install three additional vapor mitigation systems at the Michigan Meadows Apartment Complex. The RWP stated indoor air samples will be collected shortly after installing the systems. This should be completed as soon as possible if indoor air samples have not already been taken. It should be noted that IDEM requires at least one round of indoor air sampling under worst-case scenario conditions. Worst-case scenario is late winter/early spring, the inside temperature is 10 degrees greater than the outdoor temperature, the soil is frozen or saturated with rain, doors and windows are closed, and the mechanical heating system is operating. Therefore, it may be necessary to collect additional air samples if worst-case scenario conditions were not met.

4. A vapor sampling plan including annual sampling of the Michigan Meadows Apartments and Michigan Plaza at worst-case scenario conditions needs to be included in the RWP. Also, all vapor data collected to date must be included in the RWP.
5. Two businesses in the strip mall and three of the apartment buildings have or will have operating vapor mitigation systems. While these may eliminate the inhalation pathway, they are an active engineering control that requires maintenance and monitoring. Because of the nature of a VRP Covenant Not to Sue (CNTS), with which IDEM releases the applicant from all further responsibility, any technology which requires active operation and maintenance cannot be included as a part of the permanent closure strategy. VRP does not anticipate granting closure on any site while active remediation is still required.
6. The RWP indicates that indoor air impacts at the Michigan Plaza and Michigan Meadows Apartments are attributable to background conditions and implies the vapor contamination is from the Genuine Parts plume. Tables 19a and 19b show the Constituents of Concern (COCs) detected above target indoor air concentrations are mainly PCE and TCE. The presence of these COCs in soil and groundwater on the Michigan Plaza and Michigan Meadows Apartment properties has been shown not to be related to the Genuine Parts site. The COCs cis-1,2 DCE and vinyl chloride were each detected above target indoor air concentrations at the Michigan Plaza site. The shallow groundwater in this area also has cis-1,2 DCE and vinyl chloride contamination which is attributable to the Michigan Plaza plume (Figures 31C and 31D).
7. Three source areas are identified in the RWP including one beneath the Michigan Plaza building as Source Area A, one near the Michigan Meadows Apartment Buildings 10 and 6 as Source Area B, and a third source area near Michigan Meadows Apartment Building 1 as Source Area C. No soil samples have been collected beneath the Michigan Plaza building in the area of the former Accent Cleaners and soil impacts in all three source areas have not been delineated to RISC Residential Default Closure Levels (RDCLs). The soil medium must be addressed in the RWP.
8. Figures 20, 22, 32a and 32b imply that all or nearly all of the deep cis-1,2 DCE and vinyl chloride contamination is a part of the Genuine Parts plume. There is currently insufficient data to support whether this is accurate or not. There are no deep wells between Genuine Parts well MW-166 and the up-gradient edge of the Michigan Plaza plume, which there is approximately 300 feet between those two wells. The contaminants and contaminant behavior from both plumes are nearly identical. Without a clear measurement of the vertical extent of contamination in all Michigan Plaza source areas, IDEM cannot determine if deep contaminants present down-gradient of these source areas are primarily related to the Michigan Plaza release. Deep wells in the areas of GP-A-01, MMW-2S, and west of MMW-11S may clarify the nature and extent of deep contaminants. Also, cross-sectional maps of the plumes, with data points, need to be submitted in the Revised RWP.
9. Wells MW-2S, MW-3S, MW-4D, MW-5D, MW-6D and MW-7S have apparently been sampled since September 2006 but those results have not been tabulated. Figures 31a-31d have not been updated to show the entire well network or the updated plume data. It appears from the figures that all updating stopped in February 2007, even though the RWP is dated February 22, 2008. All tables and figures must show the most current data.
10. The IDEM appreciates that there is a significant amount of data about the site and that there have been several phases of investigation. However, the tables and figures are separated out into individual components depicting single sampling or mobilization events. This makes it difficult to get a full picture of the plume behavior. The IDEM requests one large scale figure which shows all soil samples and another figure which shows all groundwater samples with dates of sampling.

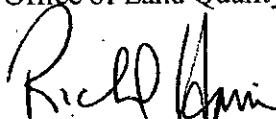
11. The RWP identifies PCE, TCE, cis-1,2 DCE, and vinyl chloride as indicator compounds. If these compounds are the COCs in the remedial project area, then closure goals need to be included in the RWP for all COCs and also identifying the COC closure goals for soil, groundwater, etc. The RWP also states that closure goals for cis-1,2 DCE and vinyl chloride will be determined at a later date; however, closure goals for these compounds need to be provided in the Revised RWP.
12. The RWP states that institutional controls will be utilized upon site closure. It is not clear which institutional controls are to be implemented such as groundwater or soil restrictions in an Environmental Restrictive Covenant (ERC). Institutional controls should be clearly identified in the RWP for both the Michigan Plaza and Michigan Meadows Apartments properties.
13. Figure 2b shows a red outline of the approximate boundaries of the VRP project area. Although it is appropriate at this stage of the project to identify areas targeted for remediation, the final Covenant Not to Sue area will be determined at the conclusion of the project. Please note that coverage under a CNTS will not be granted for areas, media, or constituents that have not been sampled, for areas of the site that are beyond the area of contaminant delineation, or that extend beyond the Michigan Meadows property boundary.
14. According to RISC Guidance, Level IV QA/QC documentation should be provided when defining nature and extent of contamination and at closure. These requirements may be found at [http://www.in.gov/idem/programs/risc/tech\\_guide/pdfs/riscapp2.pdf](http://www.in.gov/idem/programs/risc/tech_guide/pdfs/riscapp2.pdf)
15. The IDEM Draft Pilot Program Vapor Intrusion Guidance states that Level IV QA/QC documentation should be provided with all sampling. All future indoor air sampling should include Level IV QA/QC documentation (including raw data).
16. A site-specific matrix spike/matrix spike duplicate was not collected for the quarterly sampling in September 2007. A site-specific matrix spike/matrix spike duplicate should be provided with every quarterly sampling event.
17. The RWP did not state that IDEM will split confirmation sampling either during additional investigations or for closure sampling. The IDEM must split samples for both soil and groundwater before closure will be granted for the site. A final sampling and analysis plan must be submitted to IDEM for approval before the end of the project.

Please respond to the above comments in a Revised Remediation Work Plan within 60 days from receipt of this letter. If you have any questions, please contact me at (317) 233-2991, (800) 451-6027, or at [ebrittai@idem.in.gov](mailto:ebrittai@idem.in.gov).

Sincerely,



Erin Brittain, Project Manager  
Voluntary Remediation Program  
Office of Land Quality



Richard Harris, Section Chief  
Voluntary Remediation Program  
Office of Land Quality

cc: Erin Brittain, VRP Project Manager (2 copies)